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National Air Toxics Information Clearinghouse
How the Clearinghouse Can Help to Answer Your Air Toxics Questions

Radian Corp., Research Triangle Park, NC

Prepared for

Environmental Protection Agency
Research Triangle Park, NC

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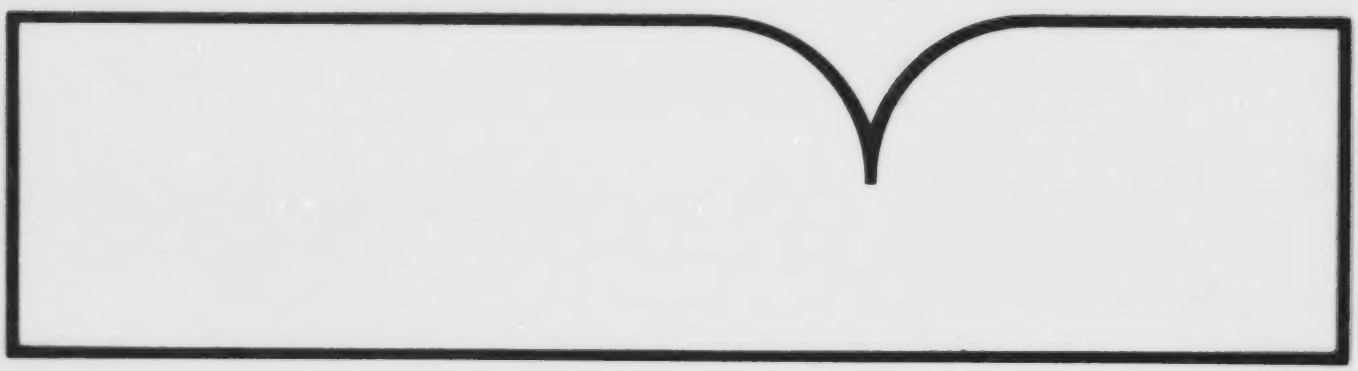

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The purpose of this report is to complement the effort now underway to prepare and implement multiyear development plans by showing how the Clearinghouse can help to answer questions commonly asked by State and local agencies involved with air toxics assessment and control. Several sources were consulted to develop a series of questions and problem scenarios typical of those that State and local agencies might face in developing and implementing air toxics control programs, handling complaints, completing new source review permits, and carrying on other similar work that may not be part of a control program.

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NATIONAL AIR TOXICS INFORMATION CLEARINGHOUSE

EPA Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

STAPPA / ALAPCO State and Territorial Air Pollution Program Administrators
Association of Local Air Pollution Control Officials

How The Clearinghouse Can Help to Answer Your Air Toxics Questions

July 1986

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NATIONAL AIR TOXICS INFORMATION CLEARINGHOUSE: HOW THE CLEARINGHOUSE CAN HELP TO ANSWER YOUR AIR TOXICS QUESTIONS

Prepared for:

Beth Hassett
Project Officer
Strategies and Air Standards Division
Office of Air Quality Planning and Standards
U. S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Prepared by:

Radian Corporation
3200 East Chapel Hill Road/Progress Center
Post Office Box 13000
Research Triangle Park, North Carolina 27709

July 1986

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PREFACE

EPA has focused most of its past efforts in the control of air toxics on the Clean Air Act Section 112 National Emission Standards for Hazardous Air Pollutants (NESHAP) program. The Agency has undertaken measures that will accelerate the standards setting process to reduce more rapidly the risks resulting from exposure to air toxics. Yet there is still pressure for information and action on the control of air toxics being brought to bear by the public, who are concerned over continuing exposure to potentially toxic air pollutants. This public pressure has had an impact such that many State and local agencies have developed or are now actively developing air toxics regulatory programs to complement Federal activities.

In addition to accelerating Section 112 Federal standards setting, EPA is also supporting State and local air toxics control efforts through negotiations for air program grants and development of technical information documents addressing various aspects of program development. In conjunction with grant negotiations, EPA is providing guidance on preparation of multiyear development plans for State and local air toxics programs and has identified an air toxics coordinator for each EPA regional office.

In response to requests for assistance from State and local agencies, EPA has designed and is implementing an information dissemination center, known as the National Air Toxics Information Clearinghouse. The Clearinghouse is composed of a computerized data base known as NATICH, which contains indexed information on toxic and potentially toxic air pollutants. The Clearinghouse also publishes several special reports such as this one, hard copy reports of information from the data base, and a quarterly newsletter. The Clearinghouse has been designed and is being implemented in close coordination with the State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO).

The purpose of this report is to complement the effort now underway to prepare and implement multiyear development plans by showing how the Clearinghouse can help to answer questions commonly asked by State and local

agencies involved with air toxics assessment and control. Several sources were consulted to develop a series of questions and problem scenarios typical of those that State and local agencies might face in developing and implementing air toxics control programs, handling complaints, completing new source review permits, and carrying on other similar work that may not be part of a control program.

Other publications prepared by the Clearinghouse which may be useful to you include:

- National Air Toxics Information Clearinghouse: Rationale for Air Toxics Control in Seven State and Local Agencies, EPA 450/5-86-005, PB86 181179/AS, August 1985;
- National Air Toxics Information Clearinghouse: NATICH Data Base Report on State and Local Agency Air Toxics Activities, EPA 450/5-86-006, September 1985 (update scheduled for publication in July 1986);
- National Air Toxics Information Clearinghouse: NATICH Data Base Users Guide for Data Viewing, EPA 450/5-85-008, PB86 123601/AS, September 1985;
- National Air Toxics Information Clearinghouse: Ongoing Research and Regulatory Development Projects, EPA 450/5-86-007, June 1986;
- National Air Toxics Information Clearinghouse: Bibliography of Selected Reports and Federal Register Notices Related to Air Toxics, EPA 450/5-86-008, July 1986; and
- National Air Toxics Information Clearinghouse Newsletter: 12 issues, December 1983 through June 1986.

Finally, it is important to note that Clearinghouse information, including the bibliographies and list of ongoing EPA projects cited above, is updated annually. Further, the Clearinghouse requests annual data updates from State and local agencies by mailing these agencies copies of the data they had previously submitted to the Clearinghouse and requesting revisions to the data, as well as sending a set of data collection forms for submitting new information. Occasionally, agencies have had more

information to submit than is practical to write on the data collection forms (e.g., permitting records). In such cases, the Clearinghouse staff and these agencies have worked together to transfer information directly from agency computer systems to NATICH.

The Clearinghouse staff has also worked with EPA staff responsible for developing the interim Aerometric Information and Retrieval System (AIRS) data base. The Clearinghouse is exploring the feasibility of exchanging ambient monitoring data with AIRS.

To obtain additional information on data submission or on accessing the NATICH data base, contact the Clearinghouse staff at EPA's Pollutant Assessment Branch in Research Triangle Park, North Carolina at (919) 541-5519 or FTS 629-5519.

ABSTRACT

The National Air Toxics Information Clearinghouse has been established by the EPA Office of Air Quality Planning and Standards (OAQPS) for the purpose of aiding information transfer among Federal, State, and local air quality management agencies. This report has been published as part of that effort. Its purpose is to illustrate how the Clearinghouse can help to answer questions commonly asked by State and local agencies involved with air toxics assessment and control. The Appendix to this report includes an index to the 12 issues of the Clearinghouse Newsletter.

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PART 1. A WORD ABOUT THE CLEARINGHOUSE AND THIS REPORT

The National Air Toxics Information Clearinghouse has been established as a cooperative effort by EPA's Office of Air Quality Planning and Standards (OAQPS), the State and Territorial Air Pollution Program Administrators (STAPPA), and the Association of Local Air Pollution Officials (ALAPCO) to aid information transfer among Federal, State, and local air quality management agencies. This report illustrates how the Clearinghouse, specifically the NATICH data base, and other sources of information can help to answer the questions State or local agencies might face in working to control air toxics.

The goal of the Clearinghouse is to help users find information, either in the form of contacts in other agencies who are knowledgeable in a specific area or in the form of published reports. To meet this goal, the Clearinghouse includes information provided by State and local agencies on a variety of topics including air toxics program information, acceptable ambient concentrations, pollutant research, methods development activities, nonhealth-related impacts, permitting, source testing, ambient monitoring, and emission inventory work. Knowledgeable contacts in each area are listed for each agency. Bibliographic information from several Federal agencies and references to ongoing EPA and National Institute of Occupational Safety and Health (NIOSH) projects are also included in the Clearinghouse.

Information is available from the Clearinghouse in two forms: the NATICH on-line data base and hard copy reports. In either form, sufficient data are presented to allow users to determine if they would like to call the contacts listed to obtain further information.

Instructions for logging on to the on-line data base are found in the report entitled "National Air Toxics Information Clearinghouse: NATICH Data Base Users Guide for Data Viewing," EPA 450/5-85-008, September 1985, and in the National Air Toxics Information Clearinghouse Newsletter, March 1986. For more information on these publications, call the Clearinghouse staff at EPA's Pollutant Assessment Branch in Research Triangle Park, North Carolina at (919) 541-5519 or FTS 629-5519. On-line, information is accessed by calling on certain reports by report number. These reports are listed in Table 1 and described in this report.

TABLE 1. NATIONAL AIR TOXICS INFORMATION CLEARINGHOUSE ON-LINE REPORTS

AGENCY INFORMATION

1. View Agency Name, Address, Telephone Number, Contacts
2. View Air Toxics Program Information by Agency
3. View Acceptable Ambient Air Concentrations by Agency
4. View Pollutant Research Information by Agency
5. View Methods Development Activities by Agency
6. View Non-Health Related Impacts Information by Agency
7. View Permitting Information by Agency
8. View Source Testing Information by Agency
9. View Ambient Air Monitoring Data by Agency

POLLUTANT INFORMATION

10. View List of Pollutants and CAS Numbers
11. View Acceptable Ambient Air Concentrations by Pollutant
12. View Pollutant Research Information by Pollutant
13. View Permitting Information by Pollutant
14. View Source Testing Information by Pollutant
15. View Ambient Monitoring Information by Pollutant

SOURCE INFORMATION

16. View SIC Codes and Industry Categories
17. View Permitting Information by SIC Code
18. View Source Testing Information by SIC Code

RESEARCH

19. View Bibliographic and Ongoing Research Citations by Key Word

EMISSION INVENTORY

20. View Emission Inventory Data

RISK INFORMATION

21. View Selected EPA Preliminary Risk Analysis Results

Clearinghouse information is published in hard copy form annually in three reports: (1) the information from State and local agencies and selected EPA preliminary risk analyses, (2) the bibliographic citations, and (3) the list of relevant ongoing EPA and NIOSH research and regulatory development projects. For more information on these hard copy reports, contact the Clearinghouse staff at the telephone numbers listed on page 1. In addition to the on-line data base and hard copy reports, the Clearinghouse publishes a quarterly Newsletter and occasional special reports such as this one.

This report emphasizes accessing the NATICH on-line date base. Accessing information on-line requires more explanation than use of the hard copy report because the on-line user must select the most appropriate data access point. Once the user decides how best to look for information, the appropriate on-line report number must be selected. Data access points vary depending on the type of information, but usually include pollutant, source category, and agency. The same information is available in the hard copy report with the exception of data on permitting and source testing. Due to the large quantity of data on these topics, the hard copy abbreviates these data somewhat. In addition, data are continuously added to the data base and the new information, while available on-line immediately, is presented only annually in the hard copy report.

The report's questions and case study scenarios have come from a variety of sources, reflecting many of the actual questions the Clearinghouse has fielded. Some questions and case study scenarios were derived from EPA experience in helping agencies use the Clearinghouse and in reviewing State and local agency air toxics control work. State and local agency and EPA regional representatives in the Clearinghouse working group also suggested questions. After developing the list of questions and the problem scenarios, Clearinghouse staff members familiar with the NATICH on-line data base, reports, and newsletters prepared descriptions of how the Clearinghouse has and can continue to help to address your questions and problems.

This report contains three main sections and one appendix. The first section is this introduction. The second section presents frequently asked questions and their answers phrased as the Clearinghouse might present them

to you. This section's arrangement reflects the phases your agency might typically go through in developing and implementing an air toxics control program. These phases include: air toxics problem definition, program design, implementation, enforcement, and progress measurement. The third section presents problem scenarios which illustrate the kind of help the Clearinghouse can offer on a daily basis to State or local air agencies coping with air toxics problems, regardless of whether the agency has an air toxics control program or not. Appendix A is an index, grouped by major subject headings, of all Clearinghouse Newsletter articles published through June 1986. The index is included here to help users locate useful information found in Newsletter articles. Twelve issues of the Newsletter have been published to date. This is the first time an index to the Newsletters has been made available.

PART 2. QUESTIONS FREQUENTLY ASKED DURING PROGRAM DEVELOPMENT AND IMPLEMENTATION

Many State and local agencies have recently decided to develop and implement programs to reduce emissions of toxic air pollutants. These agencies are finding that the program development process requires several important steps: problem definition, program design, implementation, enforcement, and progress measurement. These steps are discussed in detail in a report prepared for EPA's Control Programs Development Division (CPDD) entitled, "State and Local Air Toxics Programs: Initial Development Support," November 1985. This report is available from CPDD by calling (919) 541-5591 or FTS 629-5591.

The National Air Toxics Information Clearinghouse can help provide answers to many of the questions that might arise during these phases. Although the Clearinghouse will not be able to answer all questions per se, it can, at minimum, provide contact names and telephone numbers or references to technical support/guidance documents.

Five elements of the program development process are listed below and scenarios are presented that will enable you to understand how the Clearinghouse can be useful in each step.

2.1 PROBLEM DEFINITION

The objective of this phase of air toxics program development is to identify, collect, and evaluate background information useful in making sound and informed decisions about the need for and approach to regulating emissions of air toxics.

> SCENARIO. Over the past few years your agency has heard more and more about air toxics. You have received several citizen complaints about odors as well as questions about cancer occurrence. Your neighboring States are initiating air toxics control programs and EPA has asked you for a multi-year

development plan outlining your future air toxics activities. You have decided that you need to look more closely at the air toxics problem in your State and prepare a statement of need to present to your legislature or other decision-making body outlining why an air toxics control program is or is not necessary for your agency. At this point, some of the following questions will probably be asked:

1. **How can your agency find out which agencies have air toxics control programs already in place? How do you find the appropriate contacts in these agencies? That is, who is knowledgeable within specific air toxics subject areas, and what are their telephone numbers?**

The Clearinghouse can help with all of these questions. As with all of the questions in this report that the Clearinghouse can answer, you can find answers either by accessing the NATICH data base on-line or by using the latest edition of the hard copy report. In response to the first question, both sources show which State and local agencies have reported to the Clearinghouse that they have air toxics control programs in place and which have reported that they are developing programs. On-line, you can select Report 2 for this information. Report 2 gives State and local agency responses to a series of 13 questions pertaining to various characteristics of an air toxics control program. You can access the information by agency, by control program characteristic, or by a combination of characteristics. For example, Report 2 will list all the agencies that report having an air toxics control program in place. Report 2 is illustrated in Figure A.

One of the primary aims of the Clearinghouse is to put users in contact with people, either in other State/local agencies or at EPA, who can help them. To this end, the Clearinghouse lists contacts in six areas of expertise for each State and local agency that has submitted information to the Clearinghouse. The six areas are: regulatory program, permitting, source testing, ambient monitoring, emission inventory, and health effects. The contact names and telephone numbers are found in Report 1. Figure B illustrates the content of Report 1.

Figure A. NATICH On-line Report 2

REPORT 2. AIR TOXICS PROGRAM INFORMATION

STATE: IL AGENCY: IL Env. Prot. Agency, Div. of Air Pollution Control
REGULATORY CONTACT: Paul Purseglove PHONE: (217) 782-7326

PROGRAM STATUS

Y 1. Air Toxics Control Program (ATCP) in place?
N 2. Developing an ATCP?

PROGRAM STRUCTURE

N 3. ATCP based on promulgated regulations?
Y 4. ATCP based on information guidelines?

PROGRAM SCOPE

N 5. Scope limited to specific list of pollutants?
N 6. Scope limited to list of sources/source categories?

APPLICATION

Y 7. Use acceptable ambient conc. in permit review process?
N 8. Formally adopted ambient stds for non-criteria pollutants?
Y 9. Ambient conc/stds based on safety factor applied to TLV?
Y 10. Ambient conc/stds based on orig. health effects research?
Y 11. Use control tech. req. for sources of specific pollutants?
Y 12. Use risk assessment on case-specific basis?
Y 13. Maintain an emissions inventory for air toxics?

COMMENTS ON CLARIFICATIONS:

This Agency is currently evaluating various risk assessment procedures being used in other Federal or State agencies to allow us to use their experiences to design the best approach for IEPA. However, we are reviewing permits, evaluating air toxics impacts, and if necessary, requesting emission controls.

Figure A. (Continued)

REPORT 2. AIR TOXICS PROGRAM INFORMATION

(ENTER "Y" TO SELECT PROGRAM CHARACTERISTICS)

PROGRAM STATUS

Y 1. Air toxics control program (ATCP) in place?
_ 2. Developing an ATCP?

PROGRAM STRUCTURE

_ 3. ATCP based on promulgated regulations?
_ 4. ATCP based on informal guidelines?

PROGRAM SCOPE

Y 5. Scope limited to specific list of pollutants?
_ 6. Scope limited to list of sources/source categories?

APPLICATION

_ 7. Use acceptable ambient concentration in permit review process?
_ 8. Formally adopted ambient standards for noncriteria pollutants?
_ 9. Ambient conc/stds based on safety factor applied to TLV?
_ 10. Ambient conc/stds based on original health effects research?
Y 11. Use control tech. req. for sources of specified pollutants?
_ 12. Use risk assessment on case-specific basis?
_ 13. Maintain an emissions inventory for air toxics?

REPORT 2. AIR TOXICS PROGRAM INFORMATION

PROGRAM CHARACTERISTICS SELECTED:

1: Y 2: 3: 4: 5: Y 6: 7: 8: 9: 10: 11: Y 12: 13:

STATE	AGENCY	REGULATORY CONTACT	PHONE NUMBER
CA	CA	William V. Loscutoff	(916) 445-0650
CA	CA-BAAQMD	Ed Miller	(415) 771-6000
CA	CA-MONT.	Fred Thoits	(408) 443-1135
FL	FL-JACKSON	Diane Swartz	(904) 633-3033
IL	IL-EVAN.	Vern Odom	(312) 866-2952
NJ	NJ	Bob Myers	(609) 292-6704
OH	OH-CLEVE.	Richard A. Dell	(216) 664-3591
OR	OR-LANE	Paul Willhite	(503) 726-2514
SC	SC	Phil Brantley	(803) 758-5406
WA	WA	Catherine Bens	(206) 459-6711

Figure B. NATICH On-line Report 1

REPORT 1. AGENCY NAME, ADDRESS, PHONE #, AND CONTACTS

NAME: TN Dept. of Public Health, Div. of Air Pollution Control
ADDRESS: 150 9th Avenue N., Terra Building
CITY: Nashville STATE: TN
ZIP: 37203 PHONE: (615) 741-3651

SUBJECT AREA	CONTACT NAME	TELEPHONE
Regulatory Program:	Barry Stevens	(615) 741-3651
Permitting:	James Haynes	(615) 741-3931
Source Tests:	Jeryl Stewart	(615) 741-3931
Ambient Monitoring:	Robert Foster	(615) 741-3931
Emissions Inventory:	Barry Stevens	(615) 741-3651
Health Effects:	Robert Foster	(615) 741-3931

In addition to the Clearinghouse data base, the quarterly newsletter frequently publishes articles written by State and local agencies describing some aspect of their air toxics work. Contact names and telephone numbers are typically given in each article. An index to the Newsletters is found in Appendix A.

2. Which agencies have air toxics control programs based upon informal guidelines and which have programs based upon something more formal such as promulgated regulations? What are the problems and the advantages associated with both approaches? How does your agency's statutory authority compare with that of other agencies?

The Clearinghouse can help you find out which agencies base their control programs on informal guidelines and which use promulgated regulations. This information is found in Report 2 (see Figure A). The data base does not have information on the advantages and disadvantages of these two regulatory approaches. Once you have identified some agencies that use each approach, however, you are encouraged to call the contact listed for that agency and discuss the agency's experience with a particular approach.

The Clearinghouse has not asked agencies to provide an analysis of their regulatory authority. If you are interested in this topic you should identify potential contacts based on some program characteristics (Report 2) and use the Clearinghouse to obtain contact names and telephone numbers for agencies reporting about programs which might be compatible with your available authority.

Similarly, the Clearinghouse cannot show you how your agency would compare specifically with other agencies on regulatory authority, but it can help you identify useful contacts. For example, if your agency determines that it is necessary to use formally adopted ambient standards, you would be able to identify other agencies using this approach, again, through Report 2 of the on-line data base.

3. Which pollutants should you be concerned about? What pollutants are other agencies regulating and what averaging times are associated with the acceptable ambient concentrations? Which pollutants have been or are being assessed by EPA and which of these already have NESHAPs established for them?

Although the Clearinghouse does not designate which pollutants are hazardous, you can draw some conclusions on this topic based on information submitted by participating agencies. For example, you can find out what acceptable ambient concentrations have been set by participating agencies, the averaging times associated with these concentrations, as well as what pollutants have been addressed in permits, source tests, ambient monitoring, and emission inventories.

Information on acceptable ambient concentrations, permitting, source testing, ambient monitoring, and emission inventories is available from a variety of access points. Data on acceptable ambient concentrations can be accessed by agency in Report 3 and by pollutant in Report 11. These reports are illustrated in Figures C and D. Report 3 lists the pollutants and associated Chemical Abstract Services (CAS) numbers, acceptable ambient concentrations, and averaging times for each agency that has reported this information. Report 11 allows the user to select a specific pollutant of interest and then see which agencies have established acceptable ambient concentrations for that pollutant and what these concentrations and associated averaging times are.

Similarly, permitting information can be accessed by agency (Report 7), pollutant (Report 13), and by Standard Industrial Classification (SIC) code (Report 17). Pollutants are accessed using CAS registry numbers or pollutant names. Figures E, F, and G illustrate the Reports 7, 13, and 17, respectively. Permitting information includes the agency name, permit identifier, and contact name and telephone number, as well as the SIC code of the source, the type of facility permitted, the year the permit was issued, type of control equipment, pollutants, their CAS numbers, and emission limits.

Source testing information is also available by agency (Report 8), pollutant (Report 14), and SIC code (Report 18). These are illustrated in Figures H, I, and J. Information provided on source testing includes the facility category (e.g., municipal waste incinerator), SIC code, year of test, sampling technique, analytical method, pollutants and CAS numbers, emission rates, and sample locations.

Accessing permitting and source testing information is a two-step process. First, you will find a brief description of the permitted or tested facility, each accompanied by an access code. Then, you can get more

Figure C. NATICH On-line Report 3

REPORT 3. ACCEPTABLE AMBIENT CONCENTRATIONS BY AGENCY

STATE: VA AGENCY: VA Air Pollution Control Board
REGULATORY CONTACT: Melinda S. Osborne PHONE: (804) 786-4867

POLLUTANT	CAS #	CONC	UNITS	AV TM
Acetaldehyde	75-07-0	3000.0000	UG/M3	24 hr
Acetic acid	69-19-7	400.0000	UG/M3	24 hr
Acetic anhydride	108-24-7	160.0000	UG/M3	24 hr
Acetone	67-64-1	30000.0000	UG/M3	24 hr
Acetonitrile	75-05-8	1100.0000	UG/M3	24 hr
Acetylene	74-86-2	3.0000	UG/M3	24 hr
Acetylene tetrabromide	79-27-6	250.0000	UG/M3	24 hr
Acetylsalicylic acid	50-78-2	80.0000	UG/M3	24 hr
Acrolein	107-02-8	4.0000	UG/M3	24 hr
Acrylan	79-06-1	5.0000	UG/M3	24 hr
Acrylic acid	79-10-7	450.0000	UG/M3	24 hr
Acrylonitrile	107-13-1	45.0000	UG/M3	24 hr
Aldrin	309-00-2	4.0000	UG/M3	24 hr

Etc. ...

Figure D. NATICH On-line Report 11

REPORT 11. ACCEPTABLE AMBIENT CONCENTRATIONS BY POLLUTANT

POLLUTANT: Formaldehyde CAS #: 50-00-0

AGENCY	CONC	UNIT	AV TM
CT	12.0000	UG/M3	8 hr
IL	0.0150	UG/M3	1 yr
IN-SBH	18.0000	UG/M3	8 hr
MA	0.2000	UG/M3	24 hr
NC	300.0000	UG/M3	15 min
NV	0.0710	MG/M3	8 hr
NY	2.0000	UG/M3	1 yr
PA-PHIL.	7.2000	UG/M3	1 yr
VA	12.0000	UG/M3	24 hr
WA-OLYMPIA	0.0500	PPM	

Figure E. NATICH On-line Report 7

REPORT 7. PERMITTED FACILITIES BY AGENCY

STATE: TN AGENCY: Chattanooga-Hamilton Co. Air Pollution Control Bureau
PERMITTING CONTACT: Rodney D. Hames PHONE: (615) 867-4321

SIC	FACILITY CATEGORY	DATE	ACCESS
2491	Wood treatment with creosote	1972	99971
2819	HCL-acid plant	1972	99918
2819	Semi-works gas, HCL, and HBR, scrubber system	1972	99917
2822	Synthetic rubber polymerization	1972	99977
.			
.			
.			
2865	Synthesis of benzyl chloride and benzotrichloride	1982	99902
2865	Purification of benzyl chloride, benzotrichloride	1972	99901
2865	Production of benzoflex (registered trademark)	1982	99900
2865	Benzoflex (registered trademark) esterfication	1982	99897***

Etc. ...

*** Users must note access numbers of interest in order to call up more information about a specific permit. The continuation of this figure on the next page gives more information on a permit for benzoflex® esterfication, access number 99897.

Figure E. (Continued)

ENTER ACCESS #: 99897***

REPORT 7. PERMIT DESCRIPTION

STATE: TN AGENCY: Chattanooga-Hamilton Co. Air Pollution Control Bureau
PERMITTING CONTACT: Rodney D. Hames PHONE: (615) 867-4321
ACCESS #: 99897

FACILITY CATEGORY: Benzoflex^{R} Esterification Process
4-DIGIT SIC CODE: 2865
YEAR PERMIT ISSUED: 1982
LATEST YEAR AMENDED:
PERMIT ID #: 3500-30199999-53
CONTROL EQUIPMENT: Uncontrolled
OTHER COMMENTS:

POLLUTANT	CAS #	EM LIMIT	UNIT	SOURCE
Benzoic acid	65-85-0	0.1000	LBS/HR	Process
Diethylene glycol	111-46-6	0.0100	LBS/HR	Process
Dipropylene glycol	110-98-5	0.0100	LBS/HR	Process
Propanediol, 1,2-	57-55-6	0.0100	LBS/HR	Process
Toluene	108-88-3	0.1400	LBS/HR	Process

*** See the previous page for an explanation of the access number.

Figure F. NATICH On-line Report 13

REPORT 13. PERMITTED SOURCES BY POLLUTANT

POLLUTANT: Cadmium CAS #: 7440-43-9

AGENCY	SIC	FACILITY CATEGORY	ACCESS
IL	0000	Chrysler Corp.	99959
IL	0000	Kestor Solder	99938
IL	3241	Waste Alcohol Fuel in Dryers #1, 2, 3	99644
IL	3351	Solder and Flux Operation	99698
IL	3711	Automobile Fabricating Plant	99697***
MN	4953	Electric Utility Burning RDF	99769

Etc. ...

*** Users must note access numbers of interest in order to call up more information about a specific permit. The continuation of this figure on the next page gives more information on a permit issued by the State of Illinois for an automobile fabricating plant, access number 99697.

Figure F. (Continued)

ENTER ACCESS #: 99697***

REPORT 13. PERMIT DESCRIPTION

DATE: IL AGENCY: IL Env. Prot. Agency, Div. of Air Pollution Control
PERMITTING CONTACT: Paul M. Purseglove PHONE: (217) 782-7326

FACILITY CATEGORY: Automobile Fabricating Plant

4-DIGIT SIC CODE: 3711
YEAR PERMIT ISSUED: 8/20/85
LATEST YEAR AMENDED:
PERMIT ID#: 73050691
CONTROL EQUIPMENT:

OTHER COMMENTS:

POLLUTANT	CAS #	EM LIMIT	UNIT	SOURCE
Cadmium	7440-43-9	0.0008	LBS/HR	Waste oil in boiler
Chlorine	7782-50-5	1.8900	LBS/HR	Waste oil in boiler
Chromium	7440-47-3	0.0020	LBS/HR	Waste oil in boiler
Lead powder	7439-92-1	0.0350	LBS/HR	Waste oil in boiler

*** See the previous page for an explanation of the access number.

Figure G. NATICH On-line Report 17

REPORT 17. PERMITTING SOURCES BY SIC CODE

SIC: 4953

AGENCY	SIC	FACILITY CATEGORY	ACCESS
AL	4953	Municipal incinerator	99772
IL	4953	16 tanks/still/boiler	99686
MN	4953	Municipal waste incinerator	99996***
MN	4953	Electric utility burning RDF	99769

Etc. ...

***
Users must note access numbers of interest in order to call up more information about a specific permit. For example, more information appears below for this incinerator in Minnesota.

REPORT 17. PERMIT DESCRIPTION

STATE: MN AGENCY: MN Pollution Control Agency, Div. of Air Quality
ACCESS #: 99996***
PERMITTING CONTACT: Mike Hansel PHONE: (612) 296-7371
FACILITY CONTACT: Municipal Waste Incinerator

4-DIGIT SIC CODE: 4953
YEAR PERMIT ISSUED: 1984
LATEST YEAR AMENDED:
PERMIT ID#: 2011-84-I/O-1
CONTROL EQUIPMENT: Mechanical collector and electrostatic precipitation
OTHER COMMENTS:

POLLUTANT	CAS #	EM LIMIT	UNIT	SOURCE
Arsenic and compound	7440-38-2	2.0000	UG/M3	Combustion
Beryllium	7440-41-7	0.0200	UG/M3	Combustion
Fluorine	7782-41-4	20.0000	UG/M3	Combustion
Hydrogen chloride	7647-01-0	70.0000	UG/M3	Combustion
Lead powder	7439-92-1	0.0150	UG/M3	Combustion
Mercury	7439-97-6	0.1000	UG/M3	Combustion

Figure H. NATICH On-line Report 8

REPORT 8. TESTED FACILITIES BY AGENCY

STATE: TX AGENCY: TX Air Control Board
SOURCE TEST CONTACT: Maxine Jenks PHONE: (512) 451-5711

SIC	FACILITY CATEGORY	DATE	ACCESS
2819	Chemical manufacturing	09/10/83	99853
2911	Refinery	12/00/84	99854***
2951	Hot mix plant	04/09/84	99855
4953	Hazardous waste landfill	10/11/82	99828
4953	Municipal waste incinerators	00/00/85	99802
4953	Municipal waste incinerators	00/00/85	99801

*** Users must note access numbers of interest in order to call up more information about a specific source test. For example, more information appears below for the test at this Texas refinery, access number 99854.

REPORT 8. SOURCE TEST DESCRIPTION

STATE: TX AGENCY: TX Air Control Board
SOURCE TEST CONTACT: Maxine Jenks PHONE: (512) 451-5711
ACCESS #: 99854***
FACILITY CATEGORY: Refinery

4-DIGIT CODE: 2911
YEAR PERMIT ISSUED: 12/00/84
TEST ID #: CL-TX-ST-2
SAMPLING TECHNIQUE: Pesticide head hi-vols + GC
ANALYTICAL METHOD: GC/MS
OTHER COMMENTS:

POLLUTANT	CAS #	EM RATE	UNIT	LOCATION
Benzene	71-43-2	2563.0000	UG/M3	Downwind
Tetrachloroethylene	127-18-4	34.0000	UG/M3	Downwind
Toluene	108-88-3	4631.0000	UG/M3	Downwind
Trichloroethane, 1,1,1-	71-55-6	38.0000	UG/M3	Downwind
Xylene, M-	108-38-3	64.0000	UG/M3	Downwind

Figure I. NATICH On-line Report 14

REPORT 14. SOURCE TESTING INFORMATION BY POLLUTANT

ENTER CAS # OR POLLUTANT NAME: 50-00-0

POLLUTANT: Formaldehyde CAS #: 50-00-0

AGENCY	SIC	FACILITY CATEGORY	ACCESS
CO	2436	Wafer Board Manufacturing	99805
OR	2821	Synthetic Resin Manufacture	99858
RI	2261	Textile Finishing	99800
WI	2492	Wafer Board Plant - Line 1	99795***

*** Users must note access numbers of interest in order to call up more information about a specific source test. In this example, more information was requested for a wafer board plant, access number 99795.

REPORT 14. SOURCE TEST DESCRIPTION

STATE: WI AGENCY: WI Dept. of Nat. Res., Bureau of Air Management
SOURCE TEST CONTACT: Joe Perez PHONE: (608) 266-8401
ACCESS #: 99795***
FACILITY CATEGORY: Wafer Board Plant Line 1

4-DIGIT CODE: 2492
TEST DATE: 84/09/19
TEST ID #: 858009020
SAMPLING TECHNIQUE: Impingers in an ice bath
ANALYTICAL METHOD: Ambient air test
OTHER COMMENTS: Method published in American Ind. Hygiene Assoc. Journal 43(11): 845-852 (1982)

POLLUTANT	CAS #	EM RATE	UNIT	SOURCE
Formaldehyde	50-00-0	1.9910	LB/HR	Press vents 2 of 4

Figure J. NATICH On-line Report 18

REPORT 18. SOURCE TESTING INFORMATION BY SIC CODE

ENTER 2-, 3-, OR 4-DIGIT SIC CODE: 4953

REPORT 18. TESTED SOURCES

SIC: 4953

AGENCY	SIC	FACILITY CATEGORY	ACCESS
AL	4953	Municipal incinerator	99789
CA-SCAQMD	4953	Hazardous waste management facility	99848***
CA-SCAQMD	4953	Hazardous waste management facility	99847
CA-SCAQMD	4953	Fluid treatment plant	99844
CA-SCAQMD	4953	Treatment of non-hazardous liquid wastes	99822
MN	4953	3 M Chemolite incinerator	99792
OR	4953	Municipal solid waste incineration	99862
TX	4953	Hazardous waste landfill	99828
TX	4953	Municipal waste incinerators	99802
TX	4953	Municipal waste incinerators	99801

*** Users must note access numbers of interest in order to call up more information about a specific source test. For example, the continuation of this figure on the next page gives more information about a test conducted at a hazardous waste management facility in California's South Coast Air Quality Management District, access number 99848.

Figure J. (Continued)

REPORT 18. SOURCE TEST DESCRIPTION

STATE: CA AGENCY: South Coast Air Quality Management District
ACCESS #: 99848***
SOURCE TESTING CONTACT: E. Camarena PHONE: (818) 572-6296
FACILITY CATEGORY: Hazardous Waste Management Facility

4-DIGIT SIC CODE: 4953
TEST DATE: 05/31/84
TEST ID #: 84-287
SAMPLING TECHNIQUE: Evacuated glass "grab" sample bulb
ANALYTICAL METHOD: FID/GC, EC/GC, PID/GC
OTHER COMMENTS:

POLLUTANT	CAS #	EM RATE	UNIT	LOCATION
Benzene	71-43-2	200.0000	PPM	Flare collection
Carbon tetrachloride	56-23-5	0.6000	PPM	Flare collection
Chloroform	67-66-3	25.0000	PPM	Flare collection
Tetrachloroethylene	127-18-4	150.0000	PPM	Flare collection
Toluene	108-88-3	550.0000	PPM	Flare collection
Trichloroethylene	79-01-6	80.0000	PPM	Flare collection
Vinyl chloride	75-01-4	500.0000	PPM	Flare collection

***See previous page for an explanation of the access number.

detailed information by selecting the access code for each specific permit or source test in which you are interested.

Agency name and pollutant are the access points for ambient monitoring information in Reports 9 and 15, respectively. These reports are illustrated in Figures K and L. Ambient monitoring information is provided on sampling site, sampling and analytical techniques used, and pollutants monitored. Emission inventory information is found in Report 20 (Figure M). It can be accessed by agency, by emission inventory characteristics, or by a combination of these characteristics. Report 20 lists answers to questions which address the status, data collection methodology, scope, and information contained in an agency's emission inventory, including inventory results (see Figure M).

To find out which pollutants EPA is assessing and which pollutants already have NESHAPs, you would need to consult the bibliographic citations of EPA reports and Federal Register notices and the compilation of ongoing EPA research and regulatory development projects. On-line, this information is found in Report 19. Report 19 is illustrated in Figure N. Bibliographic citations can be accessed by document number or key word. If you know a specific document by document number, you could use that access point to view the abstract, price information, authors, and key words used to reference that document. Each document has been assigned key words pertaining to pollutant, source, reference type, and sponsoring agency acronym. You can use any or all of these key word categories to find citations. For example, you could enter the CAS number for beryllium and the reference type "NESHAP" for documents supporting the beryllium NESHAP. (A key to the reference type and agency abbreviations is given in Report 19.) To review the intent-to-list decisions, you would use "FR" for Federal Register notice as the reference type.

All Background Information Documents for existing NESHAPs are included in the bibliographic citations, and all final rulemaking notices for NESHAPs can be found by accessing Federal Register notices. All preregulatory assessment notices, intent-to-list decisions, and intent-not-to-regulate decisions pertaining to future NESHAP development are cited in the Federal

Figure K. NATICH On-line Report 9

REPORT 9. POLLUTANTS MONITORED BY AGENCY

STATE: TX AGENCY: TX Air Control Board
AMBIENT MONITORING CONTACT: Maxine Jenks PHONE: (512) 451-5711

POLLUTANTS MONITORED:

Aluminum	Antimony
Arsenic and compounds as AS	Barium
Cadmium	Calcium
Chlorine	Chromium
Cobalt	Copper
Iodine	Iron
Lead powder	Manganese
Molybdenum	Nickel
Phosphorous (yellow)	Potassium
Selenium compounds, as SE	Zinc
Zirconium compounds, as ZR	Acrylonitrile
Etc. ...	

Note pollutants of interest (exact spelling as it appears on screen)

ENTER POLLUTANT NAME TO VIEW MONITORING INFORMATION (OR <R> TO EXIT):
ACRYLONITRILE

REPORT 9. AMBIENT MONITORING INFORMATION BY AGENCY

STATE: TX AGENCY: TX Air Control Board
AMBIENT MONITORING CONTACT: Maxine Jenks PHONE: (512) 451-5711

POLLUTANT:	Acrylonitrile
CITY:	Houston
COUNTY:	
BEGIN DATE:	1985
END DATE:	1985
SAMPLING TECHNIQUE:	High-volume sampler
ANALYTICAL METHOD:	GC/MS

Figure L. NATICH On ine Report 15

REPORT 15: AMBIENT MONITORING DATA BY POLLUTANT

POLLUTANT: Cadmium CAS #: 7440-43-9

AGENCY	DATES	CITY	COUNTY
AZ	1985/1985	AJO	
CA	1985/1985	Bakersfield	
CA	1985/1985	Citrus Heights	
CA	1985/1985	Concord	
CA	1985/1985	El Cajon	
CA	1985/1985	El Monte	
CA	1985/1985	Fremont	
CA	1985/1985	Fresno	
CA	1985/1985	Long Beach	
CA	1985/1985	Los Angeles	
CA	1985/1985	Merced	

Etc. ...

Figure M. NATICH On-line Report 20

REPORT 20. EMISSIONS INVENTORY INFORMATION

(ENTER 'Y' OR '' TO SELECT PROGRAM CHARACTERISTICS)

INVENTORY STATUS

Y 1. We have compiled an air toxics emission inventory.

_ 2. If no inventory exists, are there plans to compile one?

DATA COLLECTION METHODOLOGY

_ 3. Is your inventory based on data supplied through the permit process?

_ 4. Is your inventory based on questionnaires sent to sources?

5. How often is your inventory information updated? (Choose one)
_ All data updated regularly
_ Portions updated regularly
_ Updated irregularly
_ Existing inventory is the result of a one-time effort with no known plans to update

INVENTORY SCOPE

6. Inventory cover specific list of pollutants?
Y A specific list of pollutants
_ Inventory "open-ended," covering any substance for which information is provided

_ 7. Does inventory cover primarily larger point sources?

_ 8. Does inventory information include small sources that are typically handled as area sources in criteria pollutant inventories

_ 9. Are there any particular sources or source categories that are the main focus of the emission inventory?

INVENTORY INFORMATION

10. What types of data are collected and stored?
_ Source description
_ Stack and exhaust data
_ Throughput activity levels
_ Control device type and efficiencies
_ Emission estimates

Figure M. (Continued)

_ Permit/compliance data
_ SIC codes
_ CAS numbers
_ Ambient fenceline guidelines

11. How are total emissions determined?
_ Emissions data supplied by industry
_ Agency uses emission factors to calculate emissions
_ Both of above

_ 12. Is the inventory computerized? (i.e., created and maintained using a computer)

NOTE: Agency specific information also provides the number of sources and pollutants covered, and includes these two additional questions.

INVENTORY SIZE

_ 13. How many sources are included in inventory?

_ 14. How many pollutants are included in inventory?

REPORT 20. EMISSIONS INVENTORY INFORMATION
INVENTORY CHARACTERISTICS SELECTED:

1: Y 2: 3: 4: 5: 6: Y 7: 8: 9:
10: 11: 12:

STATE	AGENCY	EMISSIONS CONTACT	PHONE NUMBER
ID	ID	Kenneth Brooks	(208) 334-5360
PA	PA-PHIL	Nicholas Ciceretti	(215) 686-7893
RI	RI	Barbara Main	(401) 277-2808
TX	TX	Jim Price	(512) 451-5711
WI	WI	Jim Rickun	(608) 266-7547

Figure M. (Continued)

REPORT 20. EMISSIONS INVENTORY POLLUTANT LIST

STATE: CA AGENCY: South Coast Air Quality Management District

POLLUTANT	CAS #	EM RATE	UNIT	LOCATION
Arsenic and compounds	7440-38-2	0.0470	TNS/YR	Point source
Benzene	71-43-2	6910.0000	TNS/YR	Mobile source
Beryllium	7440-41-7	0.0370	TNS/YR	Point source
Cadmium	7440-43-9	6.9100	TNS/YR	Mobile source
Carbon tetrachloride	56-23-5	3.2000	TNS/YR	Point source
Chloroform	67-66-3	0.0006	TNS/YR	Mobile source
Chromium	7440-47-3	13.2000	TNS/YR	Mobile source
Ethylene dibromide	106-93-4	12.0000	TNS/YR	Mobile source
Ethylene dichloride	107-06-2	42.7000	TNS/YR	Mobile source
Lead powder	7439-92-1	2030.0000	TNS/YR	Mobile source
Mercury	7439-97-6	0.1300	TNS/YR	Point source
Methyl bromide	74-83-9	24.4000	TNS/YR	Point source
Methylene chloride	75-09-2	10200.0000	TNS/YR	Area source
Nickel powder	7440-02-0	2.4000	TNS/YR	Mobile source
Tetrachloroethylene	127-18-4	8850.0000	TNS/YR	Area source
Toluene	108-88-3	14200.0000	TNS/YR	Mobile source
Trichloroethane, 1,1,	71-55-6	6150.0000	TNS/YR	Area source
Trichloroethylene	79-01-6	546.0000	TNS/YR	Area source
Vinyl chloride	75-01-4	1.3700	TNS/YR	Point source
Xylene	1330-20-7	8950.0000	TNS/YR	Mobile source

Figure N. NATICH On-line Report 19

REPORT 19. BIBLIOGRAPHIC CITATIONS AND ONGOING RESEARCH

ENTER 'Y' FOR ONGOING RESEARCH CITATIONS OR 'N' FOR HISTORICAL REFERENCE CITATIONS: N
ENTER 'X' NEXT TO TYPE OF KEY DESIRED FROM FOLLOWING LIST:

CAS NUMBER: X
SIC CODE: _
REFERENCE TYPE: _
SPONSOR ACRONYM: _
ENTER CAS #: 50-00-0____

Locating and Estimating Air Emissions From Sources of Formaldehyde
EPA, Research Triangle Park, NC, OAQPS
GCA Corporation
Mar 84, 128p, EPA 450/4-84-007E, PC A07/MF A01

KEYWORDS THAT REFERENCE THIS CITATION ARE:

EF 50-00-0 EPA

To assist groups interested in inventorying air emissions of various potentially toxic substances, EPA is preparing a series of documents such as this to compile available information on sources and emissions of these substances. This document deals specifically with formaldehyde. Its intended audience includes Federal, State, and local air pollution personnel and others interested in locating potential emitters of formaldehyde and in making gross estimates of air emissions therefrom. This document presents information on (1) the types of sources that may emit chloroform, (2) process variations and release points that may be expected within these sources, and (3) available emissions information indicating the potential for chloroform release into the air from each operation.

Figure N. (Continued)

REPORT 19. BIBLIOGRAPHIC CITATIONS AND ONGOING RESEARCH

ENTER 'Y' FOR ONGOING RESEARCH CITATIONS OR 'N' FOR HISTORICAL REFERENCE CITATIONS: N
ENTER 'X' NEXT TO TYPE OF KEY DESIRED FROM FOLLOWING LIST:

CAS NUMBER: _
SIC CODE: _
REFERENCE TYPE: X
SPONSOR ACRONYM: _

ENTER REFERENCE TYPE: NESHAP

STANDARDS SUPPORT DOCUMENT: Promulgated amendments to the National Emission Standard for Asbestos
EPA, Research Triangle Park, North Carolina, OAQPS
Jun 78, 24p, EPA 450/2-77-030, PC A02/MF A01

KEYWORDS THAT REFERENCE THIS CITATION ARE:

NESHAP	EPA	1332-21-4
1522	1531	1541
1542	152	153
154	15	1629
162	16	

The National Emission Standard for Asbestos is being amended. Scientific information indicates that asbestos exposure can cause cancer and other adverse health effects. The amendments will reduce asbestos emissions by requiring that proper work practices be followed during the renovation and demolition of buildings where friable asbestos materials are present and by prohibiting the spray application of asbestos materials which would be friable after drying. A brief description of the economic and environmental impacts associated with these amendments is included in this document.

Figure N. (Continued)

```
ENTER 'Y' FOR ONGOING RESEARCH CITATIONS OR 'N' FOR HISTORICAL REFERENCE
CITATIONS:  Y
ENTER 'X' NEXT TO TYPE OF KEY DESIRED FROM FOLLOWING LIST:

CAS NUMBER:          X
SIC CODE:            _
REFERENCE TYPE:      _
SPONSOR ACRONYM:     _
ENTER CAS #:         50-00-0____

ONGOING RESEARCH

TITLE:               Effects of Formaldehyde on the Respiratory System
STATUS:              Started FY 84; Complete by FY 87
CONTACT:             NIOSH/DRDS/EPIB, J. Gamble

KEYWORDS THAT REFERENCE THIS CITATION ARE:

     50-00-0         ES        NIOSH

CAS NO:              50-00-0
CHEMICAL:            Formaldehyde
PROJECT TYPE:        Epidemiology
```

Register notices. Similarly, all NESHAP development projects are included in the list of ongoing EPA projects. Like the bibliographic citations, the ongoing projects information is indexed by sponsoring agency, chemical, source category, and type of document or project. The information on ongoing projects includes work being done by the National Institute of Occupational Safety and Health (NIOSH), as well as ongoing EPA work. For a list of NESHAPs under development and a person to contact for each, you would use "NESHAP" as the reference type.

Additional information on specific pollutants being studied by EPA's Pollutant Assessment Branch is found on-line in Report 21 (Figure O). This report contains selected preliminary cancer risk analysis results for several chemicals emitted at some specific facilities nationwide. The results are accessible by pollutant, SIC code, and State. The uncertainties associated with these risk estimates are discussed on-line prior to accessing the data, as well as in the hard copy report.

4. What concentrations of air toxics protect against adverse health effects? How should you define the term "adverse health effect"? What is a "welfare effect"? Where would you find published studies on chemical-specific adverse health and/or welfare effects? Where would you find copies of epidemiology studies that other agencies may have conducted for specific substances?

The Clearinghouse can help you find out what concentrations of air toxics various other groups have thought to cause adverse effects. This type of information can be found in bibliographic citations from EPA and from other agencies. The bibliographic citations (Report 19, illustrated in Figure N) list references to health assessments done both by EPA and by other agencies. Other agencies included are the National Institute of Occupational Safety and Health (NIOSH, part of the Centers for Disease Control); the National Academy of Sciences; the National Cancer Institute; and the World Health Organization, including the International Agency for Research on Cancer. These documents report health effects of toxic or potentially toxic pollutants that can be emitted to the air, or a group of pollutants associated with a specific industry. While ambient air exposure

Figure O. NATICH On-line Report 21

REPORT 21. SELECTED PRELIMINARY EPA RISK INFORMATION (BY POLLUTANT)

POLLUTANT: Chloroform
CAS #: 67-66-3 UNIT RISK: 0.0000230

SIC	PLANT NAME	CITY OR COUNTY	ST	TOTAL EM KG/YR	MAX CONC UG/M3	MAX INDIV RISK	ANNUAL INCID	DATE MM/YY	Q A
26	Aerojet	Sacramento	CA	49300	2.8E+01	7E-04	0.0230	04/86	*
26	American CA	Butler	AL	51830	4.7E-01	1E-05	0.0004	04/86	*
26	American CA	Halsey	OR	28178	6.5E+01	2E-03	0.0032	04/86	*
26	Temple East	Diboll	TX	103697	1.7E+02	4E-03	0.0048	04/86	*
26	Continental	Augusta	GA	65919	8.2E+01	2E-03	0.0021	04/86	*
26	Potlatch Co	Lewiston	ID	70993	2.4E+02	5E-03	0.0051	04/86	*
26	Federal PAP	Riegelwood	NC	136400	4.8E-01	1E-05	0.0035	04/86	*
26	Internation	Texarkana	TX	47341	2.5E-01	6E-06	0.0022	04/86	*
26	Gulf States	Demopolis	AL	23433	7.6E-02	2E-06	0.0002	04/86	*
26	Potlatch Co	McGhee	AR	65372	1.6E+02	4E-03	0.0028	04/86	*
26	Bergstrom P	Neenah	WI	23616	3.3E+01	8E-04	0.0098	04/86	*

Etc. ...

*Location and/or other input parameters for this source are unverified.

Figure O. (Continued)

REPORT 21. SELECTED PRELIMINARY EPA RISK INFORMATION (BY SIC CODE)

SIC CODE: 28
DESCRIPTION: Chemicals and Allied Products

POLLUTANT	PLANT NAME	CITY OR COUNTY	ST	TOTAL EM KG/YR	MAX IND RISK	ANNUAL INCID	DATE MM/YY	Q A
Butadiene, 1	American SY	Louisville	KY	38130	2E-02	0.1800	05/86	
Chloroform	Pennwalt	Calvert C	KY	9500	2E-04	0.0004	03/86	*
Chloroform	DuPont	Beaumont	TX	79700	1E-06	0.0016	03/86	*
Trichloroeth	USI	Port Arth	TX	1300	1E-07	<0.0001	04/86	*
Trichloroeth	B. F. Goodr	Calvert C	KY	1300	3E-08	<0.0001	04/86	*
Vinyl chlori	Diamond Sha	Pasadena	TX	10600	3E-05	0.0012	04/86	*
Vinyl chlori	Dow Chemical	Freeport	TX	2800	6E-06	<0.0001	04/86	*

Etc. ...

REPORT 21. SELECTED PRELIMINARY EPA RISK INFORMATION (BY STATE)

STATE: PA

POLLUTANT	PLANT NAME	CITY OR COUNTY	SIC	TOTAL EM KG/YR	MAX IND RISK	ANNUAL INCID	DATE MM/YY	Q A
Chromium	Cyclops Cor	Bridgevill	33	24	3E-05	0.0036	03/86	*
Chromium	Electrolloy	Oil City	33	29	2E-05	0.0003	03/86	*
Chromium	Standard St	Burnham	33	34	5E-05	0.0005	03/86	*
Chloroform	Hammermill	Erie	26	18798	8E-04	0.0049	04/86	*
Chloroform	Proctor & G	Mehoopany	26	29492	7E-04	0.0014	04/86	*
Butadiene	Polysar	Monaca	28	146800	2E-02	0.5900	05/86	

Etc. ...

*Location and/or other input parameters for this source are unverified.

was the focus when selecting documents to include, references on occupational exposure and exposure via drinking water are also included. Citations are given for data summaries and compilations, emphasizing analyses of information on pollutants rather than results of individual toxicity or health effects tests.

Examining the list of acceptable ambient concentrations being used by various agencies is one way to determine what concentrations of air toxics are believed to protect the general public from adverse health effects. In addition to the list of acceptable ambient levels, the Clearinghouse lists risk assessments and health assessments conducted for various chemicals by agencies who submit this information. On-line, the acceptable ambient concentrations established by various agencies are found in Report 3 (by agency) and Report 11 (by pollutant). See Figures C and D, respectively. Health risk assessments done by State and local agencies are found in Report 4 (by agency) and Report 12 (by pollutant). These reports are illustrated in Figures P and Q.

The terms "health effect" and "welfare effect" are typically defined in State legislation. The assistance which the Clearinghouse could provide you in regard to these definitions would be to help you identify contacts in other agencies who could share the definitions their agencies use. The Clearinghouse Newsletter addressed State control of toxics as a result of welfare effects (tree damage) in the February 1985 issue. The title of the article was "Air Toxics Case History: Vegetation Damage Results from Exposure to Toxic Air Pollution." An index to all Clearinghouse Newsletters is found in Appendix A of this report.

To help you find published studies on specific adverse health effects and welfare effects, the Clearinghouse includes bibliographic citations for reports published by EPA and other agencies listed above. These reports are indexed by CAS number, SIC code, document type, and sponsoring agency. Thus, it would be possible for the user to find, for example, reports on ethylene oxide and to locate a health or risk assessment for ethylene oxide. Bibliographic citations are found in Report 19 on-line, and illustrated in Figure N.

Report 6 (Figure R) deals specifically with non-health related impacts from air toxics, and will help provide information on various welfare effects. This report presents information submitted by State and local

Figure P. NATICH On-line Report 4

REPORT 4. POLLUTANT RESEARCH INFORMATION BY AGENCY

KEY TO RESEARCH ABBREVIATIONS:

HA = Health Assessment
SA = Source Assessment
EA = Exposure Assessment
TT = Toxicity Testing
ES = Epidemiological Study
MS = Monitoring Study
EF = Emission Factor Study
RA = Risk Assessment

ENTER 2-LETTER STATE ABBREVIATION: MA

REPORT 4. POLLUTANT RESEARCH INFORMATION BY AGENCY

STATE: MA AGENCY: MA Dept. of Env. Quality Eng., Div. of Air Quality Co
REGULATORY CONTACT: James F. Neely PHONE: (617) 292-5630

POLLUTANT	CAS #	TYPE OF RESEARCH	DOC
Acetaldehyde	75-07-0	HA	Y
Acetone	67-64-1	HA	Y
Acrylonitrile	107-13-1	HA	Y

Etc. ...

(The "DOC" column indicates if documentation on the study is available.)

Figure Q. NATICH On-line Report 12

REPORT 12. POLLUTANT RESEARCH INFORMATION BY POLLUTANT

POLLUTANT: Cadmium CAS #: 7440-43-9

AGENCY	TYPE OF RESEARCH ACTIVITY		DOC?
CA	EA	RA	Y
CA-BAAQMD	EA	RA	Y
MA	HA		
NV-L. VEGAS		RA	

(The "DOC" column indicates if documentation on the study is available.)

Figure R. NATICH On-line Report 6

REPORT 6. NON-HEALTH RELATED IMPACT INFORMATION

STATE: OH AGENCY: Cleveland Div. of Air Pol. Cont., Dept. of Pub. Health

We have now done many comparisons of odor versus quantition via GC olfactor response. Vegetation studies on boron, lead, cadmium, and other heavy metals have been done in conjunction with Ohio EPA.

FOR MORE INFORMATION CONTACT: Richard A. Dell PHONE: (216) 664-3591

agencies on case studies of non-health related impacts such as odor or vegetation damage. It is accessed by agency.

5. How can you find out which industries or sources emit toxic air pollutants? What non-industrial sources emit toxics and how much do they emit? How do you go about conducting an emissions inventory? How do you determine the extent of risk reduction and emission reduction that are achievable (both technically and economically)? Related to that, what is a reasonable goal for additional control?

Information in the Clearinghouse is accessible by source category as well as by pollutant. Source categories are defined by SIC codes and pollutants by CAS numbers or pollutant names, an indexing scheme that will allow you to determine which pollutants are associated with a particular source category as well as which source categories emit a particular pollutant. You can obtain this information from both permitting and source testing data submitted to the Clearinghouse by other State and local agencies. Permitting and source testing information is found in Reports 17 (by SIC code) and 13 (by pollutant name and CAS number), and Reports 18 (by SIC code) and 14 (by pollutant name and CAS number), respectively. These reports are illustrated in Figures F, G, I, and J.

These reports will include nontraditional sources only to the extent that agencies have reported these types of sources to the Clearinghouse. For example, one nontraditional source currently addressed in the Clearinghouse is air stripping towers.

The permitting records include the emission limit, the emission type, (e.g., process, fugitive, etc.), and the control equipment used for that source. The source testing records include the source and emission rate. This information will help you estimate how much of a particular pollutant some traditional and nontraditional sources emit. Both permitting and source testing records give contact names and telephone numbers so that, if necessary, you may call for additional information.

Bibliographic citations will also help you find information about sources and the pollutants they emit. Citations are indexed by source type and pollutant (Report 19, Figure N). Some of the nontraditional sources included in the citations are dry cleaning and hazardous waste disposal.

To learn more about how to compile an emissions inventory, consult Report 20. The report can help you to understand some basic features of emissions inventories and to identify other agencies that have done inventory work. Report 20 is illustrated in Figure M. In addition, EPA's Office of Air Quality Planning and Standards is preparing a technical assistance document on air toxics inventory development. This report, entitled "Compiling Air Toxics Emissions Inventories," (EPA 450/4-86-010) is scheduled for publication in the summer of 1986. It discusses considerations that should be addressed when developing an air toxics emissions inventory and offers screening tools which can be used as first steps in inventory development. Screening tools include a "crosswalk" table that lists pollutants commonly associated with specific SIC codes and a similar table listing SIC codes with pollutants that might be expected to be emitted from such sources.

The bibliographic report of EPA documents includes citations for emission factor documents which are useful in estimating the levels of emissions for emissions inventory work. The Clearinghouse Newsletter announces new emission factor documents as they are published. An index to Newsletter articles is found in Appendix A.

The Clearinghouse can help indirectly to determine the extent of risk reduction and emission reduction that is achievable both technically and economically. Clearinghouse information can help by pointing you toward contacts who may be able to share with you their experience in reducing air toxics emissions. For example, you could use Report 2 to identify agencies reporting that they use risk assessment, and then contact these agencies to discuss risk reduction. Similarly, Report 2 can identify agencies that report maintaining an emissions inventory. Contacts in these agencies may be able to discuss emission reductions achieved. Another way of identifying risk assessment work is to access the pollutant research information. On-line, this is available by agency (Report 4, illustrated in Figure P) and by pollutant (Report 12, illustrated in Figure Q). The pollutant research information tells which agencies have done risk assessments on which chemicals and whether documentation is available. After identifying the pollutant and agency, you would need to contact that agency for more information.

Information most useful in helping to determine the extent of emission reduction achievable is the permitting information submitted by State and local agencies. Information from over 26,000 permits is included in the data base (Reports 7, 13 and 17). By noting the emission limit and the control equipment for source categories of interest, you can see what emission rates are achievable, but not necessarily the estimated emission reduction. The contact person listed on the permit record may be able to provide assistance on emission reductions which were achieved for a specific source.

Bibliographic citations include references to control technology documents. As mentioned above, citations are indexed by SIC code, pollutant, and document type, and are available in Report 19.

The Clearinghouse cannot tell you what is a reasonable goal for additional control, technically and economically, based on the achievable risk and emission reduction. As described above, the Clearinghouse can help you find out about techniques for estimating risks and emissions and help you find out more information about various control technologies. The Clearinghouse can help you find contacts in other agencies who are familiar with control technologies and thus who may have addressed the issue of a "reasonable goal" for additional control. However, the definition of a "reasonable goal" for control requirements to be imposed by your agency cannot be made by the Clearinghouse.

6. How do you determine what concentrations of toxics exist currently in ambient air? What are the risks associated with these levels? Also, what pollutant concentrations have been measured in stacks? Where would you find leads for obtaining technical support for ambient monitoring, risk assessment, and stack testing?

Before determining the types and possible ambient concentrations of toxics that may be found in your area, you need to determine how you will use this information so that you can choose an appropriate method for collecting information. For example, you may want to do a simple screening emissions inventory and perhaps identify specific sources to study further, or you may want to conduct ambient air monitoring studies. A screening

inventory will help focus agency resources on the sources likely to contribute most to problems with exposure to air toxics. The level of accuracy necessary for the emission inventory will depend on how you plan to use the data and will help dictate the methodology to use.

Although the Clearinghouse cannot tell you how to determine the concentration levels of a particular toxic air pollutant of concern in your area, it can identify which other agencies have monitored for certain pollutants and how it was done. Ambient monitoring data submitted by State and local agencies are accessible by agency or pollutant (Reports 9 or 15, Figures K and L). These reports identify the sampling technique and analytical method used for a particular pollutant. For more details, you would need to contact the agency. Another source of ambient monitoring information supplied by State and local agencies is EPA's Aerometric Information Retrieval System (AIRS) which contains monitoring data on 48 organic compounds. The Clearinghouse and AIRS data bases share information collected for each data base.

The Clearinghouse can also identify which agencies have reported that they have emission inventories, the methods used to gather inventory data, the pollutants inventoried and annual emissions. This information is found in Report 20 (Figure M). Contacts who are knowledgeable in emission inventory work are also listed for each agency. These contacts would be able to discuss inventory methodology as well as emissions estimates.

EPA has assembled information on risk levels associated with chemicals the Agency is studying for some specific facilities across the country. These risk levels may be useful to you in estimating risks associated with ambient levels in your area. This information is found in Report 21 (Figure O). It includes the name of the facility, location, the source category, pollutants, emission rates, unit cancer risk factors, and estimated maximum individual cancer risk and annual cancer incidence. Definition of the risk terminology used is also provided. This risk information can be accessed by source category, pollutant, or State.

A review of stack testing information submitted by State and local agencies can help you find information on pollutant concentrations that have been measured in stacks. Source testing information is accessible by agency

(Report 8), by pollutant (Report 14), and by source type (Report 18). These reports are illustrated in Figures H, I, and J. Each source test description includes the type of facility tested, sampling techniques, analytical method, and emission rate for each pollutant tested, and the name and telephone number of a contact familiar with the test.

There are several bibliographic citations that may be useful to you in estimating stack emissions, conducting ambient monitoring, and estimating risks. These reports can be identified by referring to the Clearinghouse bibliographic citations in Report 19. Document types that may be useful include exposure assessments, emission factor documents, source sampling/ambient monitoring documents, and technical monitoring documents. The citations can also be accessed by pollutant and source category. Report 19 is illustrated in Figure N.

The list of ongoing EPA projects may also be a source of technical support in this area. These are accessible on-line in Report 19 (Figure N). This list of projects consists of studies that have not yet resulted in publicly available reports, and indicates when the work is scheduled for completion as well as a contact person who can provide study details. Several types of projects are listed, including preparation of emission factor documents, and ongoing exposure and risk assessments.

2.2 PROGRAM DESIGN

The objective of the program design phase is to make the decisions important to the establishment of an air toxics control program. These include determining program objectives, scope, implementation phases, reporting requirements, and staff responsibilities, as well as identifying the program's regulatory basis.

> SCENARIO. Your agency has completed or is well along in the problem definition phase. You have conducted a preliminary inventory and identified potential pollutants and source categories of concern. You have analyzed your statutory authority and decided that your agency indeed has the authority

to regulate air toxics under existing legislation. Now you are eager to take the information you have gathered and design a regulatory program. The following questions are typical of those you can expect to surface as you begin:

1. **Should you control both new and existing sources or just the new ones? Which pollutants/sources should be regulated? What pollutants/sources do other agencies control? Should you consider cancer risks only or potential noncancer health effects as well?**

Within this group of questions, the Clearinghouse can be most useful in providing information on what sources other agencies control. The Clearinghouse lists information for over 26,000 permits that various agencies have issued on sources of air toxics. This information is accessible on-line by agency (Report 7), by pollutant (Report 13), or by SIC code (Report 17). Examples of these reports are given in Figures E, F, and G.

The Clearinghouse does not distinguish between those agencies that regulate only new sources and those that regulate existing sources as well. Regulation of existing sources of air toxics is frequently accomplished through the permit renewal process already in place for the criteria air pollutant program. However, some agencies have no permit renewal system, and frequently have the authority to regulate only new sources. This topic is discussed in two EPA reports: "Study of Selected State and Local Air Toxics Control Strategies," EPA 450/5-82-006, October 1982; and "National Air Toxics Information Clearinghouse: Rationale for Air Toxics Control in Seven State and Local Agencies," EPA 450/5-86-005, August 1985. These reports identify some agencies that regulate only new and modified sources and others that regulate existing sources as well.

The Clearinghouse cannot make a judgment for your agency about which pollutants and sources you should regulate. It can, however, provide information on sources and pollutants regulated by other agencies. Permitting information was mentioned above as a useful source. There is also information on acceptable ambient concentrations used by different agencies. This is accessible on-line by agency (Report 3) and by pollutant

(Report 11). Reports 3 and 11 are illustrated in Figures C and D. This information includes the acceptable ambient concentration and the averaging time over which a source's contribution to the ambient concentration is calculated. In addition, source testing and ambient monitoring information may help you identify potential problems. Source testing information is found on-line in Reports 8, 14, and 18 by agency, pollutant, and source, respectively (see Figures H, I, and J). Each source test description includes the type of facility tested, sampling techniques, analytical method, emission rate for each pollutant tested, and the name and telephone number of a contact familiar with the test. Ambient monitoring information is found in Reports 9 and 15 by agency and pollutant, respectively (see Figures K and L). When the information is requested by agency, Report 9 lists all pollutants monitored by the agency selected. Then the user can request information for a specific pollutant. This includes location, dates, sampling techniques, analytical method, and a contact name and telephone number. When requesting information by pollutant, Report 15 lists the agencies that have reported doing ambient monitoring for that pollutant, the dates, and location.

With respect to cancer/noncancer risks, the majority of work to date has centered around the potential cancer risks rather than noncancer risks. The list of ongoing research and regulatory development projects can help you find people to contact who are familiar with noncancer risks, especially if you check the risk assessment projects. This information is available on-line in Report 19 (Figure N). Bibliographic citations (also Report 19) may also help you find useful information on noncancer risks. You can access this by one pollutant, source category, document type, or sponsoring agency. Accessing information on potential cancer risks using Reports 19 and 21 was discussed in Section 2.1, question 6.

2. What kinds of program designs are available and what kinds do other agencies use? Should you tie in with your criteria air pollutant program or establish a completely new system?

The Clearinghouse provides regulatory program information and a regulatory contact for all agencies that submit one. On-line, the regulatory program information is in Report 2 (Figure A). This can give you

a brief summary of how several agencies address, or plan to address, such key issues associated with regulatory program design as the use of promulgated regulations versus informal guidelines, definition of program scope, use of risk assessment, use of technology requirements, and setting of acceptable ambient concentrations. Report 2 also enables you to identify agencies that use a combination of approaches that you specify on-line. For example, you can identify agencies that use control technology requirements in the form of informal guidelines. By studying these regulatory program profiles and contacting the regulatory program person listed for agencies in which you are interested, you can gain a good understanding of the kinds of program designs available.

The bibliographic citations (Report 19) include EPA reports classified as "regulatory development guidance documents." The reports cited under this document type include detailed descriptions of other agencies' control programs. The reports cited in question 1 of this section present descriptions of several air toxics programs. Another similar report published by the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) is entitled, "Toxic Air Pollutants: State and Local Regulatory Strategies," January 1984.

State and local agencies currently regulating air toxics have tied in air toxics regulatory requirements with their criteria pollutant program permitting system, although for toxics, they have developed alternative methods for establishing the emission limits that are in the permit. Again, the Clearinghouse cannot tell you what you should do, but it can give you some information on what other agencies have done, and help you identify people to contact for more information about their perspective and experience.

3. What emission and risk levels do you want to achieve?

As mentioned above, the Clearinghouse can provide information on acceptable ambient concentrations and emission limits established by various agencies (Reports 3, 7, 13, and 17; Figures C, E, F, and G). Agencies that are including risk assessment in their regulatory program are also

identifiable (Report 2, Figure A). By contacting the appropriate person(s) in those agencies, you may discuss emission and risk levels which have been achieved for various permitted sources.

4. What resources are necessary to design approaches and phases? What is a reasonable goal for time to implementation? That is, how much time is needed to accomplish your goals? What elements should you include in your time table?

Information in the Clearinghouse can point you in the right direction to answer these questions, however, the Clearinghouse cannot tell you a specific plan of action, the timing, and the resources required for your agency. The regulatory development guidance documents listed in the bibliographic citations (Report 19) would be useful for finding suggestions and reading accounts of what other agencies have done. Report 19 is illustrated in Figure N. These reports can be identified by selecting the document type "regulatory development guidance" as a key word. Several of these reports discuss resource requirements for various types of air toxics program development work. For example, the 1982 report cited for question 1 in this section discusses both funding and staff resources used by the eight agencies interviewed for the report.

5. What role should environmental monitoring play in the design phase of your program? How do you choose appropriate modeling/monitoring techniques and how do you conduct modeling/monitoring? How do you conduct a stack test? Where do you obtain guidance on this? What levels have other agencies detected?

Both the data submitted to the Clearinghouse by State and local agencies and the bibliographic and ongoing project citations can help your agency with these questions. You can identify which agencies have done ambient monitoring, for which pollutants, the dates and places, and the sampling technique and analytical methods used. This information is available by agency (Report 9) and by pollutant (Report 15) (see Figures K and L). The contact list (Report 1) gives a contact in the ambient monitoring area with whom you could discuss the role monitoring plays in that program.

The information on pollutant research identifies those agencies which have conducted monitoring studies and if documentation is available. This is located in Report 4 (by agency) and Report 12 (by pollutant) (see Figures P and Q).

The summary of methods development activities briefly describes both ambient monitoring and dispersion modeling activities. It is available through Report 5. Report 5 is illustrated in Figure S. The example in Figure S indicates that the Texas Air Control Board is active in both of these areas. You can obtain more information about any activities listed by calling the contact listed in Report 5.

The information submitted on source tests conducted by various agencies can help you find guidance on how to conduct a stack test and on what levels other agencies have detected. Information in the source testing records includes the agency, a contact person and telephone number, the type of facility, the sampling technique, the analytical method, and the emission rate for each pollutant measured. These data are accessible on-line by agency (Report 8), by pollutant (Report 14), and by source category (Report 18) (see Figures H, I, and J). Once you have identified an agency that has conducted source tests similar to the type of test you are interested in, you can contact the person knowledgeable about these tests and get more specific information about how to conduct such a test.

Citations to bibliographic references and ongoing EPA projects can help you find answers to these questions, too. All are found in Report 19 on-line. The most useful ongoing project references pertaining to these questions would be found by accessing the project type described by the key words "monitoring, sampling, and analysis." On-line, you can combine this search with a specific pollutant and/or source type. As for bibliographic citations, you should check reference types pertaining to technical monitoring documents and methodologies for source sampling and ambient monitoring. Again, on-line you can combine a reference type search with a specific pollutant and/or source type. For example, you might choose to search for reports about monitoring for metals such as chromium. You would use key words "technical monitoring document" and "chromium" as the reference type and pollutant name.

Figure S. NATICH On-line Report 5

REPORT 5. METHODS DEVELOPMENT ACTIVITIES BY AGENCY

STATE: TX AGENCY: TX Air Control Board
REGULATORY CONTACT: Lawrence Pewitt PHONE: (512) 451-5711

1. EMISSIONS TESTING
Y/N: Y EXPLANATION:

Developed method for measuring chlorinated organics; developing method for measuring VOC's from gas storage terminals. Testing emissions from municipal solid waste incinerators.

2. AMBIENT MONITORING
Y/N: Y EXPLANATION:

Developed methods for getting arsenic, benzene, formaldehyde, PCB's, lead, vinyl chloride, PNA, ethylene oxide, epichlorohydrin, and acrylonitrile on pesticide head hi-vols. Developing method to collect.

3. DISPERSION MODELING APPLICATION, EVALUATION AND DEVELOPMENT
Y/N: Y EXPLANATION:

All toxic compounds to be emitted are modeled as a part of permit review. Nontraditional sources are included in the model evaluation. Odorous compounds are also included in the review.

4. EMERGENCY RESPONSE PROCEDURES
Y/N: Y EXPLANATION:

TACB emergency episode response manual revised and distributed to regional offices, State agencies, and interested citizens.

5. AMBIENT EXPOSURE ASSESSMENT
Y/N: Y EXPLANATION:

Monitoring sites established in Harris, Galveston, Jefferson, and Orange Counties for contaminants listed under acceptable ambient concentrations.

6. EMISSIONS MODELING FROM NONTRADITIONAL SOURCES
Y/N: Y EXPLANATION:

All sources, including nontraditional, are modeled using procedures developed at this agency. Odors are also included in this modeling.

7. OTHER
Y/N: Y EXPLANATION:

Continuing project to assess feasibility of in situ monitoring. Using biological tests system to assess exposure to a complex mix of ambient contaminants.

2.3 IMPLEMENTATION

In this phase, an agency is ready to put several aspects of its air toxics control program design into effect in order to actually control toxic air emissions. Steps may include: preparing for public education and public hearings, acquiring resources, beginning review and data collection for specific sources as well as ongoing information collection such as emissions data and control information from air toxics sources.

SCENARIO. Your agency feels that it now has designed a good program that will address a substantial portion of the air toxics problem in your area. You must now decide how to get the message out to industry about the new requirements. You would also begin work on various aspects of program design features (e.g., risk assessments, dispersion modeling, emergency response) which you had selected when developing your air toxics control program. Some of the questions that may come up include:

1. **What degree of guidance for implementation can other agencies or EPA provide you? For example, has another agency conducted a risk assessment on the same pollutant/source you want to analyze? What kinds of cost and benefits (source-specific) do you need to consider? How should an economic analysis be conducted?**

The Clearinghouse can help you find contacts in other agencies who may have addressed a particular implementation question, and it can help you find references to publications by EPA and other agencies that may be useful in implementing your program. For example, agencies submit to the Clearinghouse a list of pollutants for which they have done risk assessments. On-line, this is found in Report 4 (by agency) and Report 12 (by pollutant) (see Figures P and Q). If documentation is available, this will be indicated. For more information on any of these risk assessments, you can contact the agency that is listed.

Other sources of information on risk assessments are the bibliographic citations and the list of ongoing EPA projects. These are found in Report 19 (Figure N). You can access these data either by document/project type (e.g., risk assessment) or by pollutant, agency, or source category.

Report 21 also provides information on risks (see Figure O). This report presents preliminary risk analysis information developed by EPA's Pollutant Assessment Branch. Risks are presented for specific sources, nationwide, of several chemicals undergoing review by EPA.

As mentioned above, the Clearinghouse can help you find contacts with whom to discuss economic analysis procedures as well as costs and benefits they have considered. One way to spot potentially helpful contacts would be to use the air toxics regulatory program information (Report 2), and look for agencies reporting to use control technology requirements. As Figure A indicates, Report 2 consists of a series of questions about regulatory programs. Users can obtain a list of agencies that responded "yes" to the questions about having specific control technology requirements. By calling contacts listed for these agencies, users may be able to find agencies that have conducted economic analyses of various control technologies.

2. How should the public be involved in the implementation phase?

This is another case in which the Clearinghouse can help you to identify contacts with whom to discuss this question, but cannot provide you with a list of ways to involve the public. Contacts are listed in Report 1, illustrated in Figure B. Some citations in the EPA bibliographic references may help you as well. These would be found by accessing the reference type "regulatory development guidance" documents (Report 19). These types of documents discuss regulatory rather than technical issues. The 1982 report cited in Section 2.2, question 1 is one example of a report classified by the key word "regulatory development guidance" that discusses public involvement.

3. How do you use modeling/monitoring/stack testing data in implementation? When should you require stack testing and/or monitoring around specific sources? How could you find out what other agencies have done within these areas?

The final question under Section 2.2, Program Design, explained how to find information on modeling, ambient monitoring, and stack testing. To answer the question of how best to use these techniques in implementing your control program, you may want to contact some of the agencies that report using dispersion models and conducting monitoring and stack testing studies. The Clearinghouse does not report the number of excursions various agencies allow; to find this information you would have to contact agencies reporting control programs in place (Report 2).

4. What emission factors are available and where do you find them? How do you use them in implementing regulations?

Emission factor documents are included in the citations to EPA reports, accessible by document type and by pollutant. Ongoing emissions estimation work and associated knowledgeable contacts are identified in the references to ongoing EPA projects, accessible by project type and by pollutant. All of this information is found in Report 19 on-line.

5. How do you decide what ambient concentrations are associated with emissions from a particular source? How can emissions of multiple pollutants from one source be assessed? How do you distinguish between background levels and source-specific levels? How do the various control technologies and their differing efficiency rates tie in?

The Clearinghouse can help you identify modeling and monitoring techniques used by other agencies (see the response to the final question in the Program Design section, Section 2.2). Contacts listed for some of these agencies may have considered multiple sources in one area and multi-pollutant situations, and also may be able to discuss with you their experience in distinguishing between background levels and source-specific levels.

For more information on multiple pollutant sources, users can check permitting information and source testing data for permits and tests where two or more pollutants from the same source were involved. Both permitting and source testing information are accessible by agency, pollutant, and

source. Permitting information is found in Reports 7, 13, and 17, respectively, for these access points; and source testing information is found in Reports 8, 14, and 18. These reports are illustrated in Figures E through J.

As for information concerning control technologies, you can find many examples of control technology requirements in the permitting information. Many records concerning permits list control technologies used for a specific source as well as a contact person you can call for more information.

The bibliographic citations (Report 19) include references to documents on control technology, accessible by that document type, pollutant name, or source.

6. What are other agencies doing to prepare for accidental releases? What guidelines can EPA offer?

The main focus of the Clearinghouse has been on routine release rather than accidental release. For that reason, less information on accidental release is included. Report 5 (Figure S) can help you identify agencies active in developing emergency response procedures as well as those active in other methods development areas. The Clearinghouse Newsletter has had several articles on this topic including those in the August 1985, December 1985, and June 1986 issues. An index to all Newsletters published through June 1986 is found in Appendix A.

2.4 ENFORCEMENT

The enforcement phase is a continuation of implementation once the program is fully operational. The new emphasis of this phase is initiating inspection and enforcement actions. Since the area of air toxics control is relatively new and most agencies have been concerned with control program development work, the Clearinghouse has focused most of its information gathering efforts on problem definition and program development rather than enforcement of air toxics control requirements. As State and local control programs evolve, the Clearinghouse may begin to gather information that will address enforcement issues.

SCENARIO. At this point, you have completed any public education you decided to undertake on your control program design and have begun to do permit reviews for air toxics. Your agency must now keep those efforts going while beginning to inspect the sources you are regulating and deciding what enforcement actions you will take. The questions listed below may be among those you will be asking at this time.

1. **How should you relate enforcement of air toxics regulations with SIP inspection or enforcement requirements for some other regulation? Is there a tie-in with NESHAP enforcement? How often should source inspections be conducted? How should you conduct inspections? What kind of noncompliance penalties should you impose? What constitutes a violation? Do enforcement inspections differ from routine inspections?**

The Clearinghouse has not focused to any extent on enforcement and inspection issues, except for the special report entitled, "Rationale for Air Toxics Control in Seven State and Local Agencies," EPA 450/5-86-005, August 1985. This report includes a short discussion on enforcement experiences of agencies in the following locations: Sacramento County, California; Philadelphia, Pennsylvania; Chattanooga/Hamilton County, Tennessee; Maine; Mississippi; Nevada; and Connecticut. In the future, the Clearinghouse may expand to address more enforcement issues as State and local agencies gain more experience in enforcing air toxics policies.

For additional enforcement information, you could identify which agencies seem to be very active (e.g., have submitted a significant amount of permit information, etc.) and then get in touch with contacts in those agencies to discuss these types of questions.

2. **What other agencies have enforcement procedures? Who does what? What have other agencies set up as penalties? Are they one-time-only? Are they based on degree of violation?**

The Clearinghouse has published a special report, cited above, that would be helpful for answering these questions. You could contact people in the agencies described in this report as well as in other agencies that may have had experience in this enforcement procedure and penalties.

3. **Have other agencies been taken to court as a result of air toxics requirements? If so, where would you find details of their experience? What kinds of problems have other States had with enforcement?**

Occasionally, the Clearinghouse Newsletter addresses special case histories of enforcement requirements (e.g., February 1985, December 1985). These articles include a contact knowledgeable about the specific situation. In addition, as indicated above, the Clearinghouse data base can also help you identify contacts with whom you can discuss these questions.

4. **What assistance can EPA give you on enforcement? When do you need to have expert witnesses and where do you find out how to contact them?**

To find EPA contacts who might give you the assistance you need, you can contact the air toxics coordinator within your region. These contacts are listed in Table 2. Another source of contacts is the references to ongoing projects found in the Clearinghouse list of ongoing projects. A contact and office is listed for each project. On-line this information is found in Report 19 (Figure N). You can access ongoing projects by CAS number of the pollutant involved, SIC code of the source if a particular source is under study, reference or project type, and sponsor acronym. If, for example, you needed to contact an EPA expert in the field of risk assessment, you could access the ongoing projects by the reference type "risk assessment." This would provide you with a list describing ongoing agency risk assessment projects and a contact knowledgeable about each project.

2.5 PROGRESS MEASUREMENT

In this phase, an agency determines if its program is actually meeting the objectives defined in the design phase. As explained above in Section 2.4, the Clearinghouse has focused information gathering efforts on control program development issues more than on issues associated with

TABLE 2. EPA REGIONAL OFFICE AIR TOXICS CONTACTS

Region	Contact	Telephone Number
I	Margaret McDonough	(617) 223-4870 FTS 223-4870
II	Bob Kelly	(212) 264-2517 FTS 264-2517
III	Iz Milner	(215) 597-9090 FTS 597-9090
	Paul Racette	(215) 597-9009 FTS 597-9009
IV	Doug Cook	(404) 347-2864 FTS 257-2864
V	Harriet Croke	(312) 353-6009 FTS 353-6009
VI	Jill Lyons	(214) 767-9187 FTS 729-9187
VII	Bob Chanslor	(913) 236-2893 FTS 757-2893
	Deann Hecht	(913) 236-2893 FTS 757-2893
VIII	Dewitt Baulch	(303) 293-1761 FTS 564-1761
IX	Tim Smith	(415) 974-8219 FTS 454-8219
	Donna Deneen	(415) 974-7109 FTS 454-7109
X	Dana Davoli	(206) 442-1757 FTS 399-1757

enforcement and progress measurement. As more agencies move forward in their efforts to control air toxics, the Clearinghouse may begin to address more issues related to enforcement and progress measurement.

SCENARIO. At this point, your agency re-examines its program objectives, as defined during the design phase. Your agency director is concerned that it might be a good time to begin to address some nontraditional sources such as small degreasing operations that were not addressed originally. As you undertake this phase, your agency may ask questions such as these:

1. **How do you determine that risks or emissions have been reduced (quantified observation)?**

The Clearinghouse can point you toward references on estimating risks and emissions. These are found in the bibliographic citations and list of ongoing projects (Report 19) and you can access them by reference type such as "risk assessment" or "emission factor document" as well as by pollutant and source. Report 19 is illustrated in Figure N.

2. **Who will likely be interested in your annual and trends reports (journals, other publications, agencies)?**

In addition to the well-known journals in the air pollution field, you can always consider submitting an article to the Clearinghouse Newsletter. It is directed to an audience very interested in your air toxics work. For information about submitting an article, contact the Clearinghouse at the telephone numbers listed on page 1. The Clearinghouse bibliographic citations include references only to EPA and other Federal agency publications, so it will not help you locate appropriate journals.

3. **How do you stay current in the field of air toxics?**

The Clearinghouse bibliography of Federal government reports on air toxics and the list of ongoing EPA projects will help you keep up with where the Federal government is placing its emphasis on air toxics. This information is found in Report 19 (Figure N). The Clearinghouse Newsletter is another good source of current articles, many from State and local agencies. An index to all issues of the Newsletters is found in Appendix A to this report.

PART 3. PROBLEM SCENARIOS

This section presents problem scenarios to illustrate the kind of help the Clearinghouse can offer State and local agencies regardless of whether the agency has an air toxics control program or not and regardless of which phase of program development the agency may be working on. These scenarios address the kinds of air toxics questions that could arise at any time.

3.1 INDOOR AIR

> SCENARIO. You have received a call from a woman whose son is a third-grader at one of the county schools. The building dates from 1952 and has asbestos tile flooring in three hallways. She wonders about the risks to her son, and to other students and staff as well, from asbestos particle releases. How do you go about determining these risks?

The Clearinghouse can help you by identifying other State and local agencies that have reported dealing with asbestos and by referring you to published reports and ongoing EPA projects on asbestos. Information from State and local agencies that have responded to the Clearinghouse data collection efforts is found in the on-line NATICH data base as well as in a hard copy report. Useful information on asbestos from these agencies includes: acceptable ambient concentrations (on-line Reports 3 and 11 by agency and pollutant); pollutant research information such as health assessments, source assessments, and exposure assessments (on-line Reports 4 and 12 by agency and pollutant); permitting information (on-line Reports 7, 13, and 17 by agency pollutant and source category); source testing information (on-line Reports 8, 14, and 18 by agency, pollutant, and source); and ambient monitoring information (on-line Reports 9 and 15 by agency and pollutant). All of these reports are illustrated by figures in Part 2 of this report. All of these categories list work that agencies have done on asbestos. For example, accessing these pollutant specific reports would tell you that seven agencies have reported acceptable ambient

concentrations for asbestos (Report 11) and what those concentrations are. Report 12 would tell you that four agencies have conducted research on asbestos and that this includes exposure, risk and health assessments, and monitoring studies. Figures D and Q illustrate the type of information available in each of these reports.

In addition to the on-line data base, agencies often submit articles to the Clearinghouse Newsletter that pertain to problems such as this asbestos example. Specifically, the March 1986 edition contains an article entitled, "Puget Sound Air Agency Adopts Asbestos Regulation." An index to all Newsletters appears in Appendix A.

As mentioned above, the Clearinghouse data base includes citations to reports published by EPA and other Federal agencies as well as references to ongoing EPA projects. These are found in Report 19 and are accessible by agency, pollutant, and source. For asbestos, one citation you would find is a Background Information Document since a National Emission Standard for Hazardous Air Pollutants (NESHAP) has been promulgated for asbestos. Report 19 is illustrated in Figure N.

3.2 WELFARE PROBLEMS

> SCENARIO. Over the past three years, your agency has received several complaints from residents in a specific subdivision about vegetation damage. This has included dead pine trees as well as defoliation and eventual death of ornamental shrubs. There is a small batch chemical plant which started operation near this subdivision about four years ago. You suspect that emissions from this plant are causing the damage, but there are at least two other nearby plants that could be contributing to the problem. You need to know what chemical is causing the damage, which source is responsible, and how the damage can be stopped.

First, you will need to know the chemicals used, produced, and handled by the chemical plant you suspect and by the other plants that may be involved. You may be able to get this information from the three plants in

question. If not, you could check to see which pollutants are associated with the particular SIC codes for the specific plants. A list of SIC codes and their associated descriptions are found in Report 16, illustrated in Figure T. Report 16 gives the SIC code description when the user supplies the two, three, or four digit SIC code. The list of SIC codes and descriptions are also found in the NATICH Data Base Users Guide cited in the preface. Determining which pollutants are associated with specific SIC codes can be done by accessing permitting as well as source testing information and is discussed in Section 2.1, question 3. Another source of information is the EPA report scheduled for publication in summer 1986, entitled "Compiling Air Toxics Emissions Inventories," (EPA 450/4-86-010) which has extensive tables relating SIC codes to pollutants and vice versa.

After you have identified the chemicals involved, you can check the Clearinghouse for information on the effects of those chemicals and for other agencies who may have dealt with these chemicals. For published reports, you can check Report 19 (Figure N). Report 19 is accessible by chemical and will refer you to documents such as health assessments, risk assessments, exposure assessments, sampling and ambient monitoring methodology, emission factor documents, and control technology documents. Also in Report 19, you can find references to ongoing EPA projects such as health assessments; exposure assessments; and monitoring, sampling, and analysis work. If you are unable to find useful published material, you may be able, through the ongoing project list, to identify people working on the particular pollutants in question.

The response in Section 3.1 explains ways you can access information submitted by State and local agencies. Another way of accessing information is if you know of a particular pollutant, but are not sure of all the information accessible by pollutant, you can use the menu-driven system to identify which reports are accessible by pollutant. The reports are: Report 10 - list of pollutants and CAS numbers, Report 11 - acceptable ambient concentrations, Report 12 - pollutant research, Report 13 - permitting information, Report 14 - source testing information, and Report 15 - ambient monitoring information.

Figure T. NATICH On-line Report 16

REPORT 16. SIC CODES AND INDUSTRY CATEGORIES

10	Metal mining
101	Iron ores
1011	Iron ores
102	Copper ores
1021	Copper ores
103	Lead and zinc ores
1031	Lead and zinc ores
104	Gold and silver ores
1041	Gold ores
1044	Silver ores
105	Bauxite and other aluminum ores
1051	Bauxite and other aluminum ores
106	Ferroalloy ores, except vanadium
1061	Ferroalloy ores, except vanadium
108	Metal mining services
1081	Metal mining services
109	Miscellaneous metal ores
1092	Mercury ores

Etc. ...

3.3 NEW SOURCES

SCENARIO. Your agency recently received a permit application for a hot mix asphalt facility. The application did not list any toxic emissions. There are no other facilities of this type in your area and you are not familiar with what types of toxic emissions to expect. You need information on potential emissions, health effects of those pollutants, acceptable ambient concentrations, and sampling and analysis techniques.

The best way to find Clearinghouse information to help to answer this question is to access all information via the SIC code for hot mix asphalt facilities, which is 2951. To locate the proper SIC code, you can check the list in the NATICH Data Base Users Guide cited in the preface. Report 16 (Figure T) lists the definitions for SIC codes when the user supplies either a two, three, or four digit SIC code. State and local agency information accessible by SIC code includes the following on-line reports: Report 17 - permitting information and Report 18 - source testing information. Both of these reports ask users for a specific two, three, or four digit SIC code. The content of these reports is illustrated in Figures G and J. By using these reports, you can get an understanding of the pollutants other agencies have found to be associated with the source in question. Then you can find information about those pollutants such as acceptable ambient concentrations used by other agencies.

For example, using this SIC code to access permitting information in Report 17, you would learn that three agencies, Texas, New York, and Chattanooga/Hamilton County, Tennessee, have all issued permits for these types of facilities. These three agencies have issued a total of over 250 permits for facilities with SIC code 2951. Report 18 indicates that Maryland and Texas have conducted source tests at hot mix asphalt plants. Maryland did not list results, but Texas indicated that they had tested for hexachlorobenzene, tetrachloroethylene, and 1,1-trichloroethane.

Bibliographic citations and references to ongoing EPA projects (Report 19) are also accessible by SIC code and pollutant. Useful document types pertaining to this scenario include source assessments, emission

factor development documents, and control technology documents. There are five bibliographic citations for this SIC code, including a source assessment.

3.4 ADDITIONAL POLLUTANTS

> SCENARIO. It has recently come to your attention that a facility in your area that produces magnesium alloy from scrap metal containing magnesium is using boron trifluoride. When you learned of their potential boron trifluoride emissions, you checked health effects data in the Registry of Toxic Effects of Chemical Substances (RTECS) and the description in the Merck Index. According to these references, boron trifluoride can cause irritation of the eyes and mucous membranes. Mammalian inhalation tests for acute exposure are cited in RTECS. When you developed the list of pollutants your agency would regulate, you did not list boron trifluoride. Now you are wondering if you should be regulating it.

The Clearinghouse can direct you toward contacts in other agencies that regulate specific pollutants as well as provide you with citations to reports and references to ongoing EPA projects on a particular chemical. This information may help you decide if your agency should be regulating a specific substance. Accessing this information for a specific pollutant is explained in Section 3.1. In this case, you may find information on acceptable ambient concentrations useful in seeing which agencies regulate boron trifluoride and what ambient guidelines they use. Accessing Report 11 shows that three States, Connecticut, Nevada, and Virginia, report acceptable ambient concentrations for boron trifluoride.

You may also be interested in agencies that have issued permits for sources of boron trifluoride. Report 13 indicates that New York has issued two permits involving boron trifluoride and Texas has issued seven.

As for the bibliographic citations and references to ongoing EPA projects (see Section 3.1), you may find health, risk, exposure, and source assessments useful in this case as well as EPA regulatory citations. For

boron trifluoride, Report 19 references a NIOSH health assessment, "Criteria for a Recommended Standard: Occupational Exposure to Boron Trifluoride." The Clearinghouse has recently published a report entitled, "Methods for Pollutant Selection and Prioritization," July 1986. This report presents several points State and local agencies consider in listing toxic air pollutants of concern and describes systems used to prioritize listed pollutants.

3.5 ACCIDENTAL RELEASES

> SCENARIO. Recently your agency has been looking at your programs for accident prevention and emergency response. You feel you may have several potential sources of accidental releases. How can you get more information on the chemicals EPA listed in its acute hazards list? Which chemicals may be found in your State? What are other agencies doing in the fields of accident prevention and emergency release? In the event of an emergency, how can the Clearinghouse help you respond?

The Clearinghouse can help you prepare for an emergency as you gather information you feel you would need in order to respond. However, the Clearinghouse is not designed to provide rapid help in the event of an emergency. While you can access information fairly quickly on-line, you will often want to contact the agency that submitted that information or obtain the report for which you have found a citation, and that would be very time-consuming in an emergency. Also, most of the agency data in the Clearinghouse pertain to routine release, not emergency situations.

The NATICH data base can provide you with a summary of how other agencies have characterized their emergency response work (on-line Report 5, see Figure S). The data base can also help you find information on specific pollutants as described in the response in Section 3.1.

In addition to the NATICH data base, you can find several articles on this topic in the Clearinghouse Newsletter. The August 1985 issue, for example, included an article on the accidental release side of EPA's air

toxics strategy. The December 1985 issue described EPA's Chemical Emergency Preparedness Hotline where callers can get general program information on EPA's emergency preparedness program. The June 1986 issue discussed recent development of the Chemical Emergency Preparedness Program. Future issues of the Newsletter will continue to follow this topic. An index to all Newsletter appears in Appendix A.

APPENDIX A

INDEX TO NATIONAL AIR TOXICS INFORMATION CLEARINGHOUSE NEWSLETTER

HOW TO USE THIS INDEX

Alphabetically arranged key word headings (in boldface type) are followed by a subheading describing the context in which the key word appears in the indexed Newsletter article. The title of the article itself is not given since, for example, an article on California's process of identifying and controlling toxic air pollutants might discuss at length, or, at the other end of the scale, briefly mention, a good many topics of interest to Newsletter readers. Both broad topics of discussion and brief mentions of an item are indexed for the sake of completeness.

The subentry is followed in turn by a locator consisting of the Newsletter month and year plus page number on which the information may be found. Subsequent references to the key word in other Newsletters are separated by semi-colons and have their own subentry phrases as necessary. Thus, the first entry, Acetaldehyde, tells the reader that he may find that substance referred to in the context of California's air toxics identification and control process on page 5 of the December 1984 Newsletter. The second locator tells the reader that further information on acetaldehyde in the same context (in this case, California revised the list mentioned in the December 1984 article) may be found on page 6 of the May 1985 issue.

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